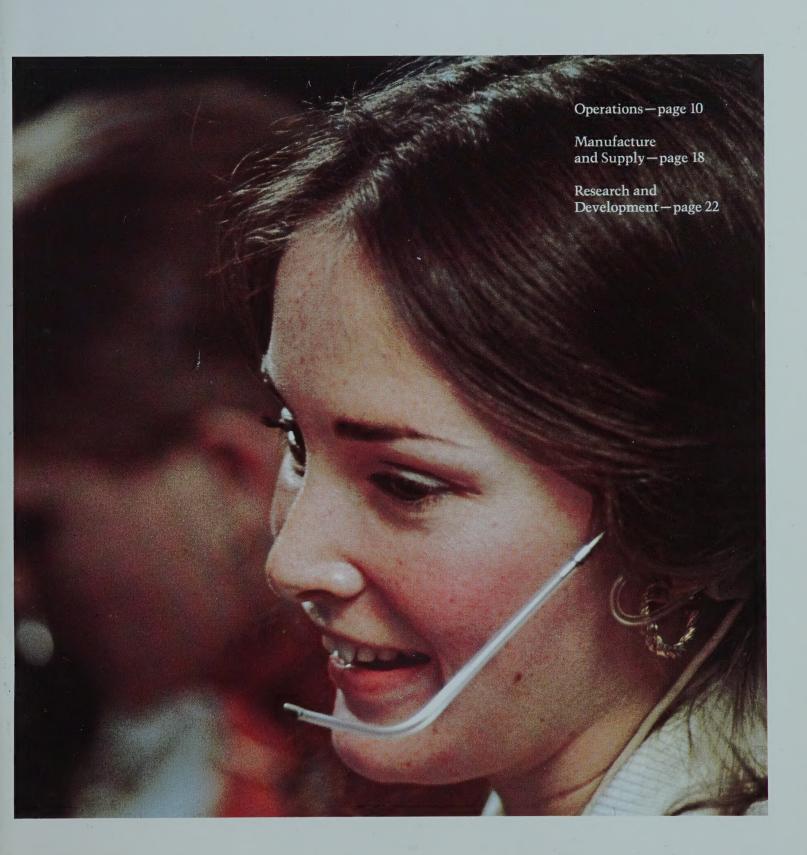
### AR53





The Annual Meeting of share owners will be held at 2 p.m. on Wednesday, April 17, 1974 in the Minneapolis Auditorium and Convention Hall, Minneapolis, Minnesota. Any persons who plan to attend the meeting should write to the Secretary of the Company for an admission card.

The financial results reported herein are for the American Telephone and Telegraph Company and its principal telephone subsidiaries, consolidated.

#### If you need further information:

- —Financial statements of ATe/T alone and annual reports of the Bell Telephone operating companies and of Western Electric, manufacturing and supply unit of the Bell System, are available on request.
- —Also available is an Annual Statistical Report, intended for those desiring further data on our operations.
- —Share owners who are blind may obtain the AT⊕T report in braille or on talking records.

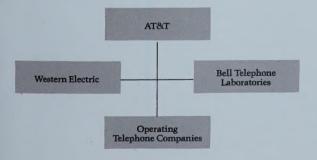
Kindly address requests to the Secretary, American Telephone and Telegraph Company, 195 Broadway, New York, N.Y. 10007; the telephone number of the Company is (212) 393-9800.

The Company maintains stock transfer offices at 180 Fulton St., New York, N.Y. 10007 and also at: 185 Franklin St., Boston, Mass. 02107; 225 West Randolph St., Chicago, Ill. 60606; and 140 New Montgomery St., San Francisco, Calif. 94105

About the cover: Mrs. Nancy Sutor, an operator in New Jersey Bell's Freehold office, is one of more than a million Bell System men and women to whom this Annual Report is dedicated and whose performance in 1973 is reflected in the operating and financial results presented here. (Since this photograph was taken, Mrs. Sutor—as the result of a request she made under our Upgrade and Transfer Plan for non-management employees—has been upgraded to service order reviewing clerk and transferred to New Jersey Bell's Business Service Center in Pleasantville.)



A RECORD OF THE YEAR
Results in Brief
Revenues increased 13 per cent, net income 18 per cent, earnings per common share from operations were \$4.98
Report of the Chairman
Year's improved results provided basis for 10 per cent dividend increase
Bell System reaffirmed commitment to policies essential to good service
Enhancing employees' opportunities to grow was one of the year's top aims
Operations
Volume of business Bell companies handled increased nine per cent in 197311
To keep service good and make it better, we spent \$9.3 billion for new construction
Advances in technology and proficiency spurred productivity advances
Manufacture and Supply
Rigorous cost reduction helped Western Electric meet its 1973 commitment to the Bell companies with only a slight increase in overall price levels
Close working relationship with Bell Laboratories accelerated new product introduction
Research and Development
Major advances in switching and transmission technology were underway at Bell Laboratories
Translating advanced technology into service required close Bell Laboratories-telephone company liaison 24
Consolidated Financial Statements



The Bell System network consists of millions upon millions of separate parts, each compatible with all the others and the whole adapted to change and to constant improvement. This vast integrated network came into being—and constantly grows in service to the nation—because the people who develop its facilities, the people who manufacture them and the people who operate them all work to common standards and share a common goal—ever-better communications for America.

RESULTS IN BRIEF	1973	1972	1971	1970	1969
Earnings per Common Share					
Before extraordinary item	\$ 4.98	\$ 4.34	\$ 3.92	\$ 3.99	\$ 4.01
Extraordinary item*	.08	_	_		-
Total	\$ 5.06	\$ 4.34	\$ 3.92	\$ 3.99	\$ 4.01
Income	Millions	Millions	Millions	Millions	Millions
Local services	\$11,419	\$10,363	\$ 9,135	\$ 8,456	\$ 7,774
Toll services	11,278	9,771	8,633	7,874	7,298
Other	1,334	1,218	1,111	998	940
	24,031	21,352	18,879	<u>17,328</u>	16,012
Expenses					1. 7
Operating	15,000	13,518	12,075	10,868	9,612
Taxes	4,350	3,807	3,314	3,265	3,497
Interest	1,734	1,495		1,003	702
	21,084	18,820	16,677	15,136	13,811
Income before					
extraordinary item	2,947	2,532	2,202	2,192	2,201
Extraordinary item*	46				
Net income	2,993	2,532	2,202	2,192	2,201
Dividends declared	1,783	1,633			
Earnings reinvested in the business	\$ 1,210	\$ 899	\$ 716	\$ 764	\$ 856
				,	
*Net gain on sale of Communications	 Satellite Corporati	on common stocl	s		



Dear Share Owner:

The goals the Bell companies set for themselves in 1973 were those that have given purpose and direction to our business since its beginnings: improve service; improve efficiency; improve earnings; and—basic to all those objectives—improve the opportunities for the continuing growth of the capabilities of the now more than one million people who comprise the Bell System and upon whose performance its results depend.

To these priorities in 1973 we added one more: to develop public understanding of the basic policies that we believe are essential to good service. Today—in the name of "competition"—these policies—end-to-end responsibility for service, the systems concept, the common carrier principle—are more directly challenged than they have been for a long time. We believe that the development of sound public policy requires informed public discussion of these issues and are determined that in this discussion our viewpoints will be vigorously represented.

#### Operating results

In 1973, revenues rose 13 per cent over 1972 and net income applicable to AT&T common shares increased by 18 per cent. Earnings per share from operations were \$4.98 as compared to \$4.34 a year ago. This was the highest percentage increase in earnings the Bell System has achieved since 1950.

On the basis of this improvement, your Board of Directors last year increased the quarterly dividend on our common shares from 70 cents to 77 cents per share. This was the eighth increase in quarterly dividends since 1958.

Certainly increased usage of our services —up nine per cent over 1972—contributed to the improvement in earnings we achieved last year.

And so, too, did further rate revisions made necessary by persistent inflation and the continuing obligation of the Bell System companies to undertake major plant expansion and the financing to support it. I believe, however, that it was principally our organizational strengths—the strengths that derive from a single, integrated enterprise engaged in the provision of nationwide telecommunications services—that figured most importantly in our attainment last year of the interdependent goals of improved service and better earnings.

Our efforts to conserve capital also were crucial to the improvement in earnings realized in 1973. Our capital requirements continued to be very large in 1973 to finance the large construction program we undertook last year. But whereas in 1971 our average capital increased by 12.5 per cent, in 1972 it grew by only 10 per cent and in 1973 by approximately 8.1 per cent.

As for our construction program, we are not experiencing—nor do we anticipate for the years immediately ahead—the year-to-year increases in spending that we had in 1969 and 1970. Since then, except for the effects of inflation, we have kept our construction program fairly constant and we expect to keep on doing so through the introduction of cost-reducing technology and improved operating efficiencies.

What may be even more significant is that today—largely as a result of tax measures aimed at encouraging investment in new and improved plant and thereby strengthening the economy —we are in a position to meet a larger portion of our capital requirements from internal sources. In some recent years, we went to the money markets for upwards of 50 per cent of the capital we required; in 1973, we reduced the ratio to 41 per cent. That, of course, is still a considerable amount of money—\$3.8 billion in 1973 and an estimated \$4 billion for 1974 and, necessarily, the better earnings it will take to attract capital in those amounts on sound terms are no less an urgent priority with us in 1974 than they were in 1973.

#### Financing the future

Over the past several years, we have relied chiefly on debt financing. We did so initially as part of a deliberate effort to increase the proportion of debt in our capital structure and, more recently, because our common equity could not be issued on terms sufficiently favorable to existing share owners.

This brought our debt ratio to a level higher than we believe is appropriate as a long-term objective. Consequently, in recent years we have used preferred stock as an alternative source of equity capital and this—together with purchases of common stock in 1973 by more than 370,000 share owners participating in our Dividend Reinvestment and Stock Purchase Plan—has moderated the increase in our debt ratio; it rose from 47.4 per cent at the end of 1972 to 47.6 per cent at the close of 1973.

The current market price of AT&T stock, while much improved over the low levels that prevailed earlier, still does not favor mounting an offering of common equity.

We are looking ahead, however, to May 1975 and the more than \$1.5 billion in equity capital we expect to derive at that time from exercise of the warrants we issued in 1970.

In view of these circumstances, it now seems probable that AT&T will not offer common equity in 1974. Rather, we anticipate meeting Bell System requirements for external capital in 1974—as we have in recent years—primarily through reliance on debt issues, possibly supplemented by such other methods of financing as appear attractive in the light of market conditions.

In order to insure greater flexibility in this latter connection, we are asking share owners at the 1974 Annual Meeting for an increase in the number of preferred shares authorized.

Beyond this, we have set for ourselves the explicit goal of accomplishing further improvements in earnings per share to enhance the value of our common equity and thereby allow us an even greater range of choices in financing future capital requirements.

During 1973 the Bell companies sold 16 issues of debt, with interest costs ranging from 7.17 to 8.36 per cent. Average interest cost of all long- and intermediate-term debt outstanding rose to 6.34 per cent from 6.15 per cent in 1972.

Also contributing to the financing of the Bell System's construction program was the \$104 million obtained last year through the sale of 2.9 million shares of stock in the Communications Satellite Corporation, purchased for \$20 per share in 1962.

#### Competition?

I would like to turn now to a question of particularly grave import for the future of telecommunications in the United States—and that is the degree to which competition should obtain in an industry recognized throughout most of its history as a natural monopoly.

That I call this question a grave one should not be construed as implying any lack of confidence in the Bell System's ability to operate profitably in a competitive environment.

Rather my concern derives from the prospect that such competition will almost certainly harm telephone service and add to the price the average customer pays for it.

As I have reported from time to time, a number of regulatory decisions over recent years have opened our business to increased competition, most notably in the market for terminal equipment—switchboards, telephones, automatic dialers and the like—and in the interstate private line field. (Private line service provides a customer with a communications channel for continuous and exclusive use between two or more locations.)

Permitted to compete on equal terms in these markets, the Bell System will give a good account of itself. What is becoming increasingly clear, however, is that it may not be competition we confront but rather an arbitrary division of the market between ourselves and others—others who are free to serve selected segments of the market that are highly profitable but who do not share our responsibility as a regulated common carrier to serve the public as a whole.

By now we have had sufficient experience with this selective competition and enough time to examine its long-term consequences to have reached the conclusion that, whenever

#### Revenues

Bell System revenues for 1973 exceeded \$23 billion, a 13 per cent increase over 1972.

#### Common share earnings

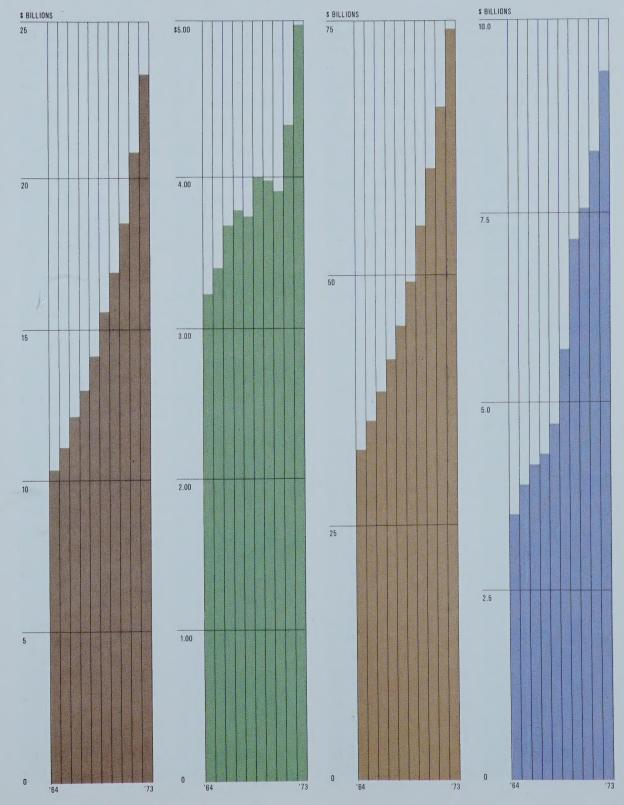
Earnings per share from operations in 1973 rose to \$4.98 from \$4.34 in 1972—the highest percentage increase since 1950.

#### Telephone plant

Our investment in telephone plant at the end of 1973 stood at \$74 billion—more than twice that of 1963.

#### Construction

We spent \$9.3 billion in 1973 on Bell System facilities. Except for inflation, we have kept our construction budget relatively stable since 1970.



Telephones
At the end of 1973 we were serving 110 million phones—a gain of 5.1 million in the course of the year.

Telephone conversations In 1973, the Bell System handled 432 million calls on an average business day, nearly six per cent more than in 1972. Long distance messages We handled 9.5 billion long distance calls in 1973, an 11 per cent increase over 1972 levels. Employees At year's end, the Bell System employed 1,023,000 men and women, an increase of only two per cent over 1972.



and wherever its further extension is proposed without sufficient examination of its impact on the public, our obligation to our customers requires us to oppose it with all the energies we can command.

And we did so in 1973. Two issues to which we specifically addressed ourselves last year are those that pose the most immediate threat to the public's interest in high quality communications services at reasonable cost: one involves the "certification" of customer-provided communications equipment and the other the further entry in the market for interstate private line services of the so-called specialized carriers.

#### Risk to service quality

First, the issue of certification. Regulatory authorities are considering proposals to supplant or supplement the present requirement that customer-provided terminal equipment be connected to our lines only through protective interfaces supplied by the telephone companies. These interfaces are designed to maintain the quality of our network and the services it provides by shielding it from harms that could result from non-standard, malfunctioning equipment.

The proposals being considered by regulators recommend the establishment of procedures whereby customer-provided equipment simply would be "certified" as fit for direct electrical connection to the network, as certain household appliances—toasters, for instance—are approved for plugging into wall sockets.

To a good many people this might seem plausible enough. However, unlike electrical appliances, communications equipment connected to the telephone system operates in two directions, receiving and transmitting signals over the network. Customer-provided communications equipment that either fails to meet network specifications or has been improperly installed or inadequately maintained risks damage not only to its user's service but to the service of others as well. In our view, the proliferation of customer-provided telephones that

would ensue from certification would seriously increase this risk.

What is more, it would add to the price the average customer pays for telephone service by depriving the telephone companies of revenues they currently derive from furnishing premium telephone sets and extensions—revenues that now help the companies keep their rates for basic telephone service low.

For these reasons—because it would cost the average customer more and risk the impairment of service to everybody—we have taken a stand against certification in our presentations to regulatory authorities.

#### Impact on customers

A second regulatory issue with potentially serious impact on the price of telephone service involves the provision of interstate private line services by specialized carriers along routes already served by the common carriers.

It has been argued that the entry of specialized carriers would afford business customers more options and, perhaps, tailor-made services that the common carriers do not offer. But the results to date indicate nothing of the sort.

The specialized carriers currently provide no service that is significantly different from our own. However, unburdened by any obligation to serve all interstate routes, they concentrate their attention on those routes it costs the least to serve while profiting them most. By doing so, they can charge less than we do even though our costs are lower.

Historically, the Bell System based its rates for interstate service on nationwide average costs—and we did so with the encouragement and sanction of regulatory authorities. In short, we have charged the same price for lines of like distance, regardless of whether they go over the high-capacity routes that link major cities or over low-volume higher-cost routes like those that link small towns in the nation's more sparsely settled areas. Thus we have been able to provide service of uniform quality and price in all parts of the nation without geographical discrimination. The specialized car-

Expense control and customer savings

Bell System charges for telephone service since 1960 have grown at a rate considerably below that of consumer prices because of our expense control and cost reduction efforts. The savings afforded our customers from these efforts are shown in the blue area—the difference between our actual revenues and what they would have been if our rates had increased as fast as the Consumer Price Index. Customer savings for each telephone we served in 1973 averaged at least \$6.00 a month.

riers on the other hand, by choosing to serve only customers located along high-volume, low-cost routes, can undercut our average prices on those routes, thereby depriving us of revenues that help support the facilities we provide for customers on low-volume, highcost routes.

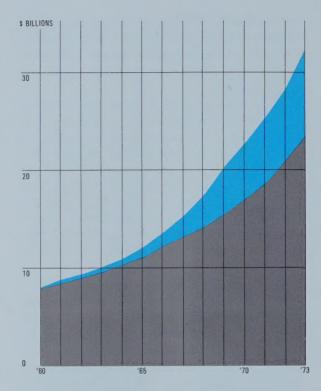
To minimize this prospect, the Bell System in 1973 filed with the FCC a new two-level rate structure for private line service, one that calls for lower rates on the low-cost, high-volume routes and—necessarily—higher rates elsewhere. These tariffs, when they become effective, will make our charges for interstate private line services competitive with the rates being charged by the specialized carriers.

Why should the average telephone customer worry about competition in providing private line services—services that, after all, are of interest primarily to businesses? For this simple reason: it will increase his telephone bill.

Let me explain that more fully. As rates on high-volume, private line routes decline, more and more businesses will find it to their advantage to switch to private lines as an alternative to general long distance service.

What the average customer perhaps does not realize is that every interstate call so lost adds to the amount of money the telephone companies must recover through charges for basic, local services. This comes about as a consequence of the way regulatory authorities prescribe "separations"—that is, the division of the telephone companies' costs between those that are applicable to intrastate operations and those that are applicable to interstate. In effect, a portion of the average revenue the Bell System derives from an interstate long distance call is "separated" from the total amount and is used to defray a portion of the fixed costs of local plant facilities, thereby helping the telephone companies keep down charges for local service.

Doubtless some people will contend that our opposition to further competition in the telecommunications industry is dictated solely by a desire to protect our markets and our earnings. However, the central point of our objection to the



contrived competition that is now being urged upon us and the basic reason we have decided to oppose it is that competition in telecommunications, and the fragmentation of responsibility for providing service that goes with it, can have but one consequence—higher costs for poorer service.

I anticipate that the debate over this issue will be intense. It is currently the focus of a number of regulatory proceedings at both the state and Federal levels and a number of legal actions as well. Eventually it may fall to the Congress of the United States to decide where the public interest lies and to determine once and for all whether the goals of the Communications Act of 1934-"to make available...to all the people of the United States a rapid, efficient, Nation-wide...communications service...at reasonable charges"-would be better served by modes of competition or, as we believe it would, by a reaffirmation of the common carrier principle that has governed the development of telecommunications in this country thus far.

It should be noted, however, that wherever competition might be mandated in the telecommunications industry, the Bell System will be a good competitor.

#### Marketing

We are unreservedly committed to the shaping of a permanent marketing strategy—and in 1973 we went a long way toward creating the organization to match it—that will assure fulfillment of the pledge I have made previously to share owners; namely, that the Bell System will abdicate no sector of telecommunications where we believe—and can by our own performance prove—that we can do a better job for the public than anyone else.

To that end, in 1973 we established at AT&T a new Marketing Department that is giving its first attention to discerning—indeed, anticipating—the requirements of the increasingly diverse and fast-changing market for business communications services—a field in which the Bell System is resolved to be the first and best.

#### Human resources

Some 100,000 Bell System employees are participating in programs specifically designed to expand and enrich the scope of their jobs. In effect, we are attempting to move accountability downward, giving capable employees—supervisors and nonsupervisors alike—the increased responsibility that provides incentives to first class performance.

Minority and women employees participated fully in Systemwide programs that assist the companies in identifying future managers. Of the 14,000 employees completing such programs in 1973, about one in two were women and one in five minority employees, thus helping to assure their increased representation on higher levels of management in the years ahead.

The percentage of minority employees in the telephone companies rose from 12 per cent in 1970 to over 14 per cent at the end of 1973, and in numbers from 96,000 to 118,000. The percentage of minority employees in highly technical craft jobs increased 50 per cent during the

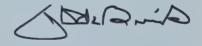
same period—there are more than 21,600 minority employees in telephone craft jobs—and minority employees holding management jobs increased 60 per cent; at the end of 1973, some 10,000 minority employees held management jobs in the companies.

Largely as a result of efforts to open up new opportunities for qualified employees through our Upgrading and Transfer Plan, the number of women in craft jobs traditionally held by men stood at approximately 11,000 at the end of 1973 compared to 2,100 at the end of 1970. Women account for 33 per cent of management employees, or over 64,000 management jobs.

It is with profound sorrow that I conclude this letter by noting the passing of one of the Bell System's great leaders, H. I. Romnes, my predecessor as Chairman of the Board.

The following is excerpted from the resolution your Board adopted upon his death: "To all his undertakings Mr. Romnes brought uncompromising integrity, an unswerving commitment to quality performance and a rare intelligence that, shunning expediency, looked beyond immediacies to long-term consequences.

"The years of Mr. Romnes' leadership of the Bell System were not easy years. That the Bell System emerged from those years with its prospects undiminished and its capabilities enhanced we owe in no small measure to the integrity of his decisions and the steadfastness of his commitment to the highest standards of public service!"



February 12, 1974

Management of the nationwide network through control centers such as this one in White Plains, New York, assures efficient use of the network around-the-clock, and enables Bell managers to deploy network facilities to accommodate hourly and seasonal shifts in long distance calling patterns as well as unexpected surges in demand.



## **Operations**



There are 21 principal operating telephone companies in the Bell System. Together with the Long Lines Department of AT&T, they operate a nationwide telecommunications network that serves 110 million telephones and, by cable, radio and satellite facilities, provides access to 98 per cent of the world's 300 million telephones.

While the system operates on a national scale, it is decentralized in management to give full regard to regional and local conditions.

In 1973, the Bell companies continued their basic job of enhancing the services provided to customers over the nationwide telephone network. Total volume of business handled by the companies in 1973 increased nine per cent over 1972.

#### Service

The quality of service—the benchmarks by which we gauge our performance—improved in 1973 in practically every category measured. The speed with which our customers receive dial tone, for example, met our target of three seconds or less 99 per cent of the time last year, thus sustaining the improvement realized in 1972. Long distance calls dialed directly by customers were completed on the first attempt 66 per cent of the time; and of those not completed, virtually all encountered "busy signals" or "no answers." And customer reports of trouble for each 100 telephones we serve dropped to an average of five per month in 1973 from 5.2 the year before.

Improvements do not just happen—they are made to happen, reflecting our firm determination to keep service good and make it better. The best evidence of this determination is the \$38 billion we have invested over the past five years in further fulfillment of our commitment to expand and improve service and to make it universally available at the lowest overall cost to customers.

#### More circuits

In 1973, we added to the nationwide network 31 million circuit miles of transmission facilities and, in the process of accommodating

and improving service to existing customers, strengthened our ability both to handle sudden and unexpected surges in calling as well as to meet the needs of tomorrow's customers.

Particularly important in 1973 was the construction of a new high-capacity coaxial cable system between Pittsburgh and St. Louis. It is capable of carrying 108,000 simultaneous telephone conversations, three times the capacity of any previous coaxial system. The introduction of this new facility—which we call the L-5 system—underscores the advantages that communications users derive from the integration of research, manufacture and operations in the Bell System.

Work was begun several years ago to develop and finance a super-capacity coaxial cable system that would be needed to meet future service requirements. These requirements were identified and defined by the Long Lines Department, whose engineers and managers are responsible for the day-to-day functioning of the interstate network. Bell Laboratories provided the technological response, and Western Electric supplied the system when Long Lines needed it. The value of such coordination is illustrated further by the fact that in the future it will be possible—primarily through the installation of additional amplifiers—to provide in existing coaxial cable systems the equivalent call-handling capacity of the Pittsburgh-St. Louis cable.

#### Other facilities

The new system was planned, too, with a view to the early deployment in the network of transmission systems of even greater economy and capacity, systems that are now under development at Bell Telephone Laboratories.

For example, during 1973 we advanced our preparation to build for field evaluation a millimeter waveguide system which, when put into service toward the end of this decade along the nation's busiest communications corridors, is expected to provide capacity for 230,000 simultaneous conversations.

We also began construction in 1973 of the first

Construction expenditures during the year amounted to \$9.3 billion. Shown at right is a new radio relay link nearing completion at a site near Los Angeles. It will boost Systemwide capacity for voice, video and data communications.

segment of a nationwide digital data transmission system that will offer data users an improved service uniquely designed for their use.

The widespread availability and rapid growth of short-haul digital transmission facilities in the nationwide network, together with the Data Under Voice (DUV) system that allows streams of digits to "hitchhike" on microwave facilities already in place, combine to form the basic building blocks of the Digital Data System.

The system will provide capability for Dataphone® Digital Service at transmission speeds of 2,400, 4,800, 9,600 and 56,000 "bits" of information per second, and promises improved performance, better maintenance and lower costs for many customers.

Construction of the initial phase of the Digital Data System linking Boston, Chicago, New York, Philadelphia and Washington, D.C., was started in 1973 and is nearing completion. In addition, we applied to the FCC last year for authorization to construct the second phase that will add 19 more cities to the network this year. Our goal is to extend Dataphone Digital Service to 96 cities by the end of 1976.

#### Domestic satellite system

Also last year we completed our plans to begin construction in 1974 of a domestic satellite system that will serve all 50 states, Puerto Rico and the U.S. Virgin Islands. The system—which will be fully integrated with the nationwide network—will consist of five earth stations built and operated by the Bell System and three orbiting satellites leased for our exclusive use from the Communications Satellite Corporation. In addition to its 28,800 voice circuits, the satellite system will add to the network new dimensions of flexibility and reliability.

The Federal Communications Commission has also approved for construction a duplicative domestic satellite system that was proposed by another carrier for the provision of interstate long distance message telephone services. We are now seeking judicial review of the FCC's grant of that proposal because we are convinced that the existence of duplicative facilities would impose on telephone users unnecessary and wasteful costs running several million dollars annually.

In addition, we believe that the proposed system would impair the efficient planning and addition of facilities to the nationwide network. In the words of President Johnson's Task Force on Communications Policy, in its report of 1968:

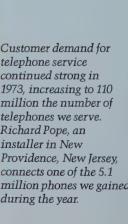
"System optimization involves the coordinated planning requirements of a vast, interdependent network of communications facilities. Since each element affects many others, development of single segments without regard to their effects upon the total system could well lead to wasteful redundancy."

#### More calling, more telephones

Fundamental and coordinated planning for growth is the essence of network management. Such planning in prior years enabled us in 1973 to handle a sizeable increase in long distance calling volumes—11 per cent higher than in



telephone service continued strong in 1973, increasing to 110 million the number of telephones we serve. Richard Pope, an installer in New Providence, New Jersey, connects one of the 5.1 million phones we gained during the year.





1972. The importance of such growth is that long distance revenues, including those derived from Wide Area Telephone Service, now account for more than 43 per cent of our operating revenues.

Customers continued last year to take advantage of the savings realized when long distance calls are dialed directly from home and office phones. In 1969, only 65 per cent of all long distance calls were dialed directly by customers. At the end of 1973, the comparable figure was 19 percentage points higher. And for each one point increase in the volume of calls dialed directly, the Bell System saves a minimum of \$45 million annually in operator costs alone; capital savings, such as reductions in switchboard requirements, also are substantial. Most importantly, by dialing direct our customers save money.

The increase in customer-dialing of long distance calls is due in part to Bell System advertising efforts to inform customers of how and when to place calls to save money.

Over the course of the year, we handled an average of 432 million local and long distance telephone calls each business day, 22 million more a day than in 1972.

Overseas calling again rose dramatically, up to 52 million calls in 1973 from 40 million in 1972, a 28 per cent increase and one of the largest recorded since overseas calling began in 1927. We expect the annual growth rate of about 25 per cent in overseas calling to continue, with volumes rising to more than 200 million calls by 1980.

More customers can now dial their own calls directly to overseas telephones. The service—known as International Direct Distance Dialing—was available at year's end to four million customers in 120 cities.

It should be noted that calling volumes—particularly long distance and overseas—continued to grow during the latter part of 1973 despite some evidence of a general economic slowdown.

In 1973, we added 5.1 million telephones to

New transmission technology introduced in 1973 assures us of a substantial increase in capacity needed to accommodate future service needs. At right, Geoffrey Watkin of Long Lines conducts field tests on a new high-capacity coaxial cable system between St. Louis and Pittsburgh.

the nationwide network, bringing total Bell System telephones in service to 110 million.

Strong growth was experienced in the demand for residence extensions. Fresh marketing efforts stimulated interest in premium phones and, of the telephones we installed in 1973, 22 per cent were Trimline® telephones. The number of push-button Touch-Tone® phones in service increased 25 per cent over 1972.

#### More switching capacity

In 1973, we added enough call-switching capacity to serve a city twice the size of Chicago. More customers than ever are served by electronic switching systems (ESS), which are more flexible and will cost less to maintain than electromechanical systems. At year's end, we had in service 455 electronic central offices, 143 more than in 1972. Since 1965, when we placed our first ESS office in service, we have made electronic switching available to 10 million telephones. Currently, we are adding electronic central offices to the network at the rate of one every two days. We are continuing the development of even more advanced electronic switching systems that offer great potential for new services.

We made good progress, too, in 1973 in the development of an electronic switching system for long distance communications. The first such system—solid-state in design—will go into service in 1976. It will be capable of switching more than 350,000 calls an hour—three times as many as existing electromechanical systems—and yet will require less space; considerable reductions are expected Systemwide in operating and maintenance costs.

Anticipating the availability of the new electronic switching equipment in 1976, our engineers last year devised a number of techniques to increase the capacity of existing electromechanical switching equipment; as modified, the equipment will accommodate expected growth in long distance traffic between now and 1977. Thus Long Lines was able to avoid installing a large number of electromechanical machines—what one might call

last year's model—with the new model "just around the corner." This initiative—illustrative of the expense controls that result from a systematic and coordinated approach to the introduction of new technology—saved tens of millions of dollars by canceling construction of 35 electromechanical switching machines.

#### Construction

Modernization projects such as ESS accounted for \$1.2 billion of our \$9.3 billion construction budget last year. Customer movement, relocation of network facilities and replacement of damaged or obsolete equipment together accounted for another \$2.1 billion of expenditures in 1973. The high level of customer mobility is reflected in this statistic: to gain five million new telephones in 1973, we had to install 30 million and remove 25 million more.

We are reducing costs in this area by encouraging our customers to "take and save" their old telephones when they move to a new home. We expect even greater cost reductions through

New call-switching capacity sufficient to serve a city twice the size of Chicago was added to the nationwide network during the year. Electronic switching machines like this one in Lawrence, Massachusetts, are being installed at the rate of one every two days.





Programs to improve service on operator-handled calls were extended to many new customers in 1973.
Below, Mrs. Anne Migliore, left, and Mrs. Joan Douthit, of New York Telephone, operate electronic consoles that improve the handling of such calls.





the widespread use of new telephones that have plug-in cords and interchangeable parts. Introduced last year, these modularly designed phones allow repairs and installations to be made faster, easier and more economically.

In addition, we are seeking to increase charges for the installation and relocation of telephones so that customers who order new or rearranged service pay a greater portion of the costs we incur in satisfying their requests.

But by far the largest portion of our construction budget went to meet growing demands for service, actual and anticipated. In 1973, we spent \$6.0 billion to maintain a rate of communications development that will allow us in the years immediately ahead to satisfy customer needs in a sound and orderly manner.

One index to the growth in demand we foresee is our estimate that annual interstate message volumes will rise from the 3.7 billion level of last year to 10.8 billion in 1983.

To put our growth prospects in perspective, we estimate that more than one-half of the interstate facilities that will be required to meet customer needs in 1983 must be built between now and then. There is no doubt that we can do the job. Doing it, of course, will require large amounts of new capital, as it did in 1973.

#### Overall results

In 1973, overall Bell System revenues increased 13 per cent and operating expenses 11 per cent. Operating taxes totaled \$4.4 billion. Interest charges on debt obligations amounted to \$1.7 billion—a 16 per cent increase over 1972.

Net income totaled \$2,993,256,000, compared to \$2,532,058,000 in 1972. During the year, the Company declared \$1.6 billion in dividends for the nearly three million holders of its common shares and committed \$192 million for holders of preferred shares.

In 1973, the Bell System achieved a rate of earnings on average capital of 8.3 per cent, compared to 7.7 per cent in 1972. While this result is the highest since 1929, it falls well short of the 9.5 per cent return we believe is required to continue attracting new money on reason-

Increasing numbers of minority and women employees participated last year in educational and training programs designed to improve the skills of our workers, new and old. Shown here is a group of apprentice craft people at a training center in Emeryville, California.

able terms in the current market. It is gratifying to note that, of AT&T's 21 principal telephone subsidiaries, 18 improved their rate of return last year over 1972 levels.

#### Rates and regulation

State regulatory authorities in 33 jurisdictions in the past year authorized increases in telephone rates that add approximately \$1 billion annually to Bell System revenues. At the end of the year, we had applications pending for nearly \$450 million in additional revenues in nine jurisdictions.

We have conscientiously examined each of our rate applications to assure ourselves, and the most fair-minded judges of our performance, that we ask for not one dollar more than is needed to attract the investment capital on which our service capability, present and prospective, ultimately depends.

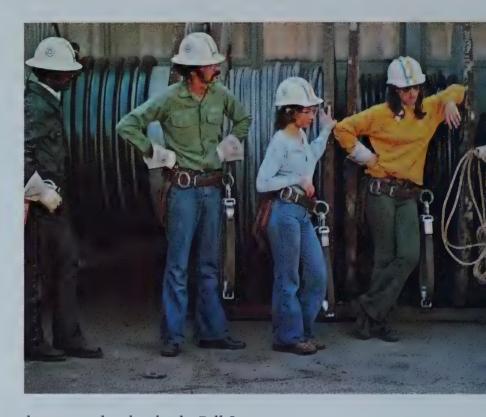
#### **Productivity**

Our ability over the years to offset modest increases in inflation and thus maintain service charges at the lowest possible level is explained largely by improvements in productivity achieved by the operating telephone companies. For example, the telephone industry's output per manhour—a commonly used measure of productivity—has increased by more than 50 per cent since 1963, according to data published recently by the U.S. Bureau of Labor Statistics. These gains are attributable chiefly to advances in technology, large increases in invested capital per employee and improvements in telephone company operating methods.

Our ability to cope with inflation is explained, too, by the intensive cost reduction efforts of Western Electric. These efforts have bolstered that company's extraordinarily high rate of productivity, which increased more than eight per cent last year alone, considerably higher than the rest of the manufacturing sector of the economy.

#### A note on the energy shortage

We have previously reported to share owners



the steps undertaken by the Bell System companies to conserve energy even before the current shortage received widespread public attention. Energy savings already accomplished by these measures are significant. Even more significant is the fact that there has been no impairment of customer service because of the shortage—nor do we anticipate any.

Regulations published earlier this year by the Federal Energy Office give us confidence that the telephone companies will receive 100 per cent of their current requirements for fuels needed to fulfill service obligations. However, this allocation may not cover all transportation needs. Western Electric, for example, already has encountered delays in the shipment of raw materials and finished products.

On the manufacturing side, Western Electric is experiencing shortages of some petrochemical materials used chiefly in the production of cable and telephone cords and housings. Supplies are tight, but not critically short, and Western Electric expects to meet its near-term commitments. However, the longer-range outlook for materials and supplies is unclear.

Also uncertain at this time is the long-term effect of the energy shortage on customer demand for telephone service. If the shortage further weakens the national economy and contributes substantially to unemployment, demand for our services may be affected.

On the other hand, long distance calling volumes may increase as customers find it more economical and convenient to substitute calling for travel.



The Bell System telephone companies serve approximately 80 per cent of the nation's telephones and operate in all states except Alaska and Hawaii. AT&T owns all of the shares of most of the companies; in five it has a majority interest, as follows: New England, 85.4%; Illinois Bell, 99.3%; Mountain Bell, 87.8%; Pacific Northwest, 89.3%; Pacific, 89.7%. The operating results of these telephone subsidiaries are consolidated in this report. Also, AT&T has a minority interest in two affiliated companies: Southern New England, 16.8%; Cincinnati Bell, 25.7%; and, in addition, a 2.0% interest in Bell Canada. Western Electric Company is wholly owned by AT&T, and Western Electric and AT&T jointly own Bell Telephone Laboratories.

#### The Bell Telephone Companies

Name	Area served Telephones s 12/31/73 (in	
New England Telephone & Telegraph Company	Maine, Massachusetts, New Hampshire, Rhode Island, Vermont	5,705
The Southern New England Telephone Company	Connecticut	2,203
New York Telephone Company	New York and portion of Connecticut	11,705
New Jersey Bell Telephone Company	New Jersey	5,301
The Bell Telephone Company of Pennsylvania The Diamond State Telephone Company	Pennsylvania Delaware	6,793 432
The Chesapeake and Potomac Telephone Company	Washington, D.C.	971
The Chesapeake and Potomac Telephone Company of Maryland	Maryland	2,821
The Chesapeake and Potomac Telephone Company of Virginia	Virginia	2,331
The Chesapeake and Potomac Telephone Company of West Virginia	West Virginia	744
Southern Bell Telephone and Telegraph Company	Florida, Georgia, North Carolina, South Carolina	9,038
South Central Bell Telephone Company	Alabama, Kentucky, Louisiana, Mississippi, Tennessee	7,620
The Ohio Bell Telephone Company	Ohio	4,431
Cincinnati Bell Inc.	Cincinnati, portions of Kentucky, Indiana	974
Michigan Bell Telephone Company	Michigan	5,142
Indiana Bell Telephone Company, Incorporated	Indiana	1,867
Wisconsin Telephone Company	Wisconsin	1,949
Illinois Bell Telephone Company	Illinois and portion of Indiana	6,719
Northwestern Bell Telephone Company	Iowa, Minnesota, Nebraska, North Dakota, South Dakota	4,558
Southwestern Bell Telephone Company	Arkansas, Kansas, Missouri, Oklahoma, Texas and portion of Illinois	12,178
The Mountain States Telephone and Telegraph Company	Arizona, Colorado, Idaho, Montana, New Mexico, Utah, Wyoming and portion of Texas	5,196
Pacific Northwest Bell Telephone Company	Oregon, Washington and portion of Idaho	2,822
The Pacific Telephone and Telegraph Company (including Bell Telephone Company of Nevada)	California, Nevada	12,012

# Manufacture and Supply

There are 1,023,000 employees in the Bell System; 206,600 of them work for the Western Electric Company. Their job is to help meet the needs of the operating companies for communications systems and components.

In 1973, Western Electric responded to the needs of the Bell telephone companies with the highest volume of products and services in its history. It was a year of significant innovation as well—technically and organizationally. New products to provide new and improved telephone services were introduced to manufacture at an accelerated rate. And new methods were adopted to speed Western Electric's response to the needs of a changing, growing telecommunications network.

#### Sales and earnings

Total Western Electric sales in 1973 were \$7.0 billion, about 7.4 per cent above 1972. This consisted, in the main, of:

- Sales to the Bell System: \$6.2 billion—an increase of 11.8 per cent over 1972;
- Sales to the U.S. Government: \$696 million, down 22 per cent from 1972.

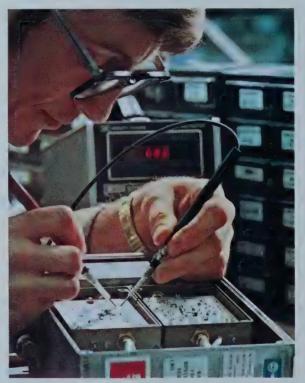
Western Electric earned \$315 million, compared to \$283 million in 1972. This amounts to a 10 per cent return on average invested capital, compared to 9.5 per cent in 1972.

#### Manufacturing

To support the extension and improvement of the network in 1973, Western Electric shipped 5.5 million lines of central office equipment and 358 billion conductor feet of exchange cable. Western Electric produced 11 million telephone sets and 980,000 lines of private branch exchange (PBX) equipment.

As a result of sustained cost reduction efforts, Western Electric was able to hold the increase in the overall prices of its manufactured products to less than two per cent in 1973. Sharp increases in the cost of copper, however, called for increases in Western Electric's prices for cable and wire. Despite these increases, the price level of Western Electric communications





The rapid rate at which technological advances are introduced into manufacture reflects the close teamwork between Western Electric and Bell Laboratories. Shown left is one product of that teamwork—a largely solid-state amplifier undergoing final tests by Harold Duffen at the Merrimack Valley Works located near Boston. The amplifier is used in the high-capacity coaxial cable system now in service between St. Louis and Pittsburgh.

products ranges between 10 and 35 per cent less than the price of similar equipment offered by other manufacturers.

Among the year's noteworthy accomplishments in manufacturing was the production of a coaxial cable transmission system—the L-5 system referred to earlier—that has added capacity for 108,000 voice circuits to facilities already in place along the densely trafficked communications corridor between Pittsburgh and St. Louis. For this project, Western Electric

Western Electric's aim in manufacturing communications equipment is a quality product at the lowest cost. During the year Western Electric produced 11 million telephones. Mrs. Cheryl Coomer, right, assembles one of the 3.7 million Trimline phones manufactured at the Indianapolis Works.





A record volume of products and services was provided the telephone companies in 1973 by Western Electric. No less impressive was the reduction in the average order-to-delivery interval for electronic switching systems—like these in manufacture at the Dallas Plant—from 79 to 60 weeks.

manufactured 815 miles of cable, 3,400 repeaters and 250 bays of transmission equipment.

Preparations for manufacturing improved amplifiers for a high-capacity ocean cable system were started last year. The first application of these transistorized amplifiers, designed by Bell Laboratories, will be in a transatlantic cable scheduled for commercial service in the first half of 1976. The 745 amplifiers strung at five-mile intervals along the 3,600-mile cable will make it possible for the system to carry 4,000 simultaneous telephone conversations, nearly four times the capacity of all five transatlantic cables we now have in service.

A direct measure of the rate at which innovation is being brought to the user is reflected in the output of transmission equipment at one of Western Electric's major plants during the last quarter of 1973—46 per cent of the equipment had been introduced in the prior 18 months. Overall, Western Electric estimates that more than 40 per cent of its total sales of manufactured items in 1976 will consist of products introduced since 1972.

It also is a continuing objective of Western Electric to reduce the interval between the time telephone company orders are received and the time that the required equipment is placed in service. By the end of 1973, for example, the 79 weeks that formerly had been required to produce and install a standard electronic central office had been reduced to 60 weeks. Modularly packaged central offices, suitable for small and moderate size communities, were placed in service in much shorter periods.

#### Cost reduction

High quality service at low cost is the goal of the Bell System and, as a member of the Bell System team, Western Electric has a major responsibility for achieving it.

One of the striking examples of the value of Western Electric's contribution to the overall goal is in its cost reduction results. In 1973, Western Electric's engineering cost reductions amounted to \$124 million on an annual basis

at going rates of production—a record year for a program now in its 26th year.

Cost reduction is not a matter of chance at Western Electric; it is a planned program with definite goals and periodic monitoring of progress by management. In 1973, for example, approximately 12,000 cases were active, involving annual savings ranging from a few thousand dollars to one case involving more than \$5.5 million.

#### Supply and purchasing

In doing its job for the Bell System, Western Electric depends heavily on a broad spectrum of American industry. Western Electric's purchases during 1973 totaled \$3.1 billion, or more than 45 per cent of its total sales. Over 50,000 suppliers in more than 4,500 cities in the United States provided Western Electric with materials for manufacturing operations, supplies for the Bell telephone companies and transportation services. Over 90 per cent of these suppliers are small businesses with fewer than 500 employees.

In its purchasing efforts, Western Electric provides assistance to businesses owned and operated by minorities in qualifying as suppliers to the Bell System. The company has set substantial dollar goals of business—with each year's goal having exceeded the last—that will be channeled to minority suppliers. Western Electric's purchases from minority companies in 1973 amounted to \$20.7 million, as compared to \$13 million in 1972, an increase better than 50 per cent.

As in past years, Western Electric continued its close attention to efficiency in its purchasing operations. By using a variety of cost-reduction and cost-avoidance techniques, Western Electric in 1973 achieved savings of over \$140 million on the purchase of services and equipment.

#### Work for the Government

Throughout 1973, Western Electric continued to discharge its responsibilities as the prime contractor for the Army's SAFEGUARD antiballistic missile defense system and other

Modern central office equipment—manufactured and installed by Western Electric—helps the telephone companies improve service and control costs. This photograph was taken last year in Beverly Hills, California, where Western Electric installed a new central office distribution frame that simplifies the wiring of customer lines to switching equipment. Designed by Bell Telephone Laboratories, the equipment also consists of a mini-computer that handles a wide variety of tasks associated with processing customer service orders.







Western Electric depends heavily on American industry in responding to telephone company needs. One of 50,000 suppliers to the Bell System manufactures microwave antennas in Chula Vista, California. Bill Kelly, a Western Electric inspector, examines a shipment of antennas to assure that they meet the exacting standards applied to all products and services Western Electric supplies the telephone companies.

government projects that require expertise in systems design. A cutback in the Safeguard program following the signing of the Strategic Arms Limitation Treaty substantially lowered Western Electric's overall sales of products and services to the U.S. Government in 1973. This reduction in Western Electric's contractual obligations led to the assignment of many employees previously involved in the antiballistic missile program to jobs related to the company's primary mission as the manufacturing and supply unit of the Bell System.

#### Service

As in its manufacturing and supply operations, Western Electric presses for innovation in its service function. Last year, the company completed plans for the construction of seven large material management centers, where extensive stocks of communications products will be available to replenish Western Electric service centers within two days and installation crews within one week. Western Electric's

objective is to make its service organizations more and more responsive to telephone company needs.

Similarly, Western Electric has organized and trained a large staff of service consultants—each a specialist in a certain product line—to work directly with telephone company people to assure that Western Electric's products and services completely satisfy the requirements of the operating companies.

Maintaining quality and economy in manufacturing at the current pace of product and process innovation is clear evidence not only of the engineering and production capabilities of Western Electric, but also of the benefits customers derive from the technical integration of Western Electric and Bell Telephone Laboratories—the process by which a technical advance accomplished in the laboratory is brought to the threshold of availability to all users of the nationwide network.

# Research and Development

The ability of Bell Telephone Laboratories to maintain a position of technological leadership in communications accounts significantly for the ability of the operating telephone companies to provide high quality service at reasonable cost.

Cost-reducing and service-improving innovation in communications has been fostered by the close association of Bell Laboratories, Western Electric and the associated Bell telephone companies, together with the staff groups of AT&T and its Long Lines Department. Their efforts have benefited the nation not only through better communications, which is our sole business, but even more broadly in the creation of other industries and new products, which is everyone's business.

#### Innovation

One merit of our closely integrated organization is that major innovations—changes for the better—can be incorporated into the network with assurance of their compatibility with existing facilities.

Three large-scale innovations that were either incorporated into the network last year or advanced significantly toward that end by Bell Telephone Laboratories have been treated elsewhere in this report—a high-capacity coaxial cable system, a millimeter waveguide system and an electronic switching system for long distance calls. The millimeter waveguide system merits further attention, however, as an example of an idea whose time has come.

The operating principles of millimeter waveguide for long distance transmission have been understood at Bell Laboratories for almost half a century. Since then, successive generations of engineers and scientists have refined the technology to the point of practical application. Only now, however, is there a realistic need for it in prospect.

The need for millimeter waveguide arises from the large increases in long distance calling—11 to 12 per cent a year—that, should they be sustained, will mean that the Bell System will have to more than double the capacity



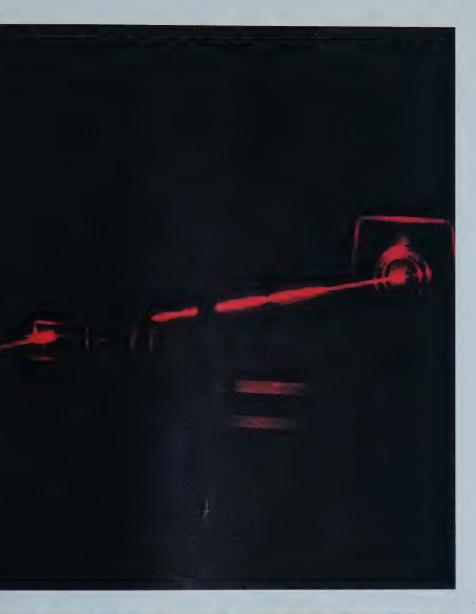
of its interstate network by 1983. The millimeter waveguide system, scheduled for its first commercial application by the end of this decade, will help the operating telephone companies and Long Lines do just that.

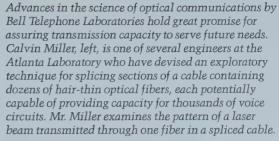
The millimeter waveguide essentially is a precisely dimensioned "tube" that has capacity for 230,000 simultaneous voice circuits; however, Bell Laboratories engineers anticipate that, with further development, the system can carry almost 460,000 circuits.

And because millimeter waveguide is a "digital" system—that is, signals will be transmitted as discrete pulses of information rather than as continuous electrical waves—it will figure importantly in the Bell System's plans to introduce more and more digital transmission systems into the network. Digital techniques will allow the Bell System to meet expected growth in demand for all network services—voice, video and data—more economically and flexibly.

Other digital transmission capabilities will

The close association of Bell Labs and Western Electric fosters ongoing innovation in telecommunications through the prompt application of advanced technology. At the Merrimack Valley Works, a Western Electric manufacturing engineer, Bob Allen, left, and a Bell Labs engineer, Shee Lee, confer on a further improvement of the commonly used TD-2 radio relav system introduced in 1950. Refinements of the system made in 1973 and preceding years have increased its original capacity seven fold.





build on extensive facilities already in service for distances up to 50 miles, and on a recently introduced intercity system for distances up to 500 miles. In addition, two new highercapacity systems now being developed by Bell Laboratories will interconnect the short-haul links as well as feed waveguide routes.

#### Optical communications

Bell Laboratories researchers advanced the science of optical communications last year. working on various components needed for an operating system that could supplement existing cable and radio facilities. For two possible light sources, Bell Laboratories scientists improved the pinhead-size laser they announced in 1970, appreciably extending its life-span, and refined the design of tiny, solid-state lamps. And new successes were achieved in designing and fabricating hair-thin glass fibers to carry light beams with very low losses in the strength of the signals transmitted.

If proved economically attractive, optical fibers may one day serve a variety of transmission needs. For example, a single fiber might carry several thousand long distance telephone calls; fibers of the same size also could be used to accommodate a few hundred intraoffice circuits within a business complex; and pencil-thin cables of 100 fibers fed through cable ducts could be valuable in metropolitan and urban areas where duct space is both scarce and expensive.

#### Responding to today's markets

While looking ahead to the development of tomorrow's network, Bell Laboratories people concentrate much effort on the communications needs of today's customers.

For example, modular phones designed by Bell Laboratories for residential service are speeding installation and repair. The new phones use interchangeable housings and plugin handset and connecting cords. Systemwide use of modular phones is expected by 1976, with savings of over \$45 million annually anticipated by the end of the decade.



Integration of research, manufacture and operations in the Bell System assures that major innovations introduced into the network will be completely compatible with existing facilities. One such innovation, the millimeter waveguide system, is currently undergoing tests in New Jersey; by the end of the decade, high-capacity waveguide systems may be in use along the nation's most densely trafficked communications corridors. Below, Bell Labs engineers study the splicing of two waveguide "tubes"

While attending to the basic communications needs of the public, the Bell companies are continuing to pay increased attention to their customers' changing tastes in telephone styling. In 1973, we introduced for market trial in several locations a new family of distinctive telephones—the Design Line\*—in a variety of colors and housings. The housings are sold directly to customers, and the telephone companies retain responsibility for repair and maintenance of working parts.

For customers wishing to dial frequently called numbers automatically, Bell Laboratories engineers developed a convenient new option—the Touch-a-matic\* telephone—that was introduced in mid-1973 by Illinois Bell. Touching a single button from an array of 32 on the new phone automatically dials any of 31 prerecorded numbers in one second. For convenient redialing after a busy signal, the 32nd button provides access to a short-term memory that automatically records the last number dialed.

Key telephone systems—extension phones with buttons and lamps—serve millions of business and residence customers who need more than one line. Bell Laboratories engineers developed two new factory-packaged key systems that became available in 1973—one for up to seven lines and 18 phones, the other for up to 14 lines and 34 phones.

Providing business communications services from central offices also is being pursued as a major way of simplifying maintenance and offering more flexible service. The Bell System presently has more than 350 electronic central offices capable of providing business firms with a full range of business communications services without requiring conventional onpremises PBX equipment. In 1973, such services were extended to small users by the introduction of a low-cost operator's console.

And, for the growing family of Bell System PBXs, yet another member went into production in 1973, offering a complete range of PBX features—along with space savings—for hotels and motels and for other customers whose serv-



New electronic switching machines for the nation's long distance network are expected to go into service in 1976. Discussing the new equipment are, from left, David Bovee, Western Electric, and Joyce Roberts, Leslie Bethel and Warren Jessop, all of the Indian Hill Laboratory near Chicago.





The association of Bell Labs and the operating telephone companies enables telephone managers to apply technological and managerial innovations to improving service performance. Below, Bell Labs engineers and New York Telephone Company managers review the operations of a computer system that permits centralized maintenance of the company's switching machines.

ice requirements run from 300 to 2,000 lines.

To meet diverse customer needs for transmitting computer, business machine and other data, the Bell System since 1960 has introduced a large variety of data sets to open up the vast switched network for data transmission. In 1973, Bell Laboratories completed development of a new line of data sets that feature compactness and self-diagnostic testing capabilities. The new sets are designed to accommodate the most important data communications needs of business customers, covering service over both private lines and the switched network. Speeds range from less than 50 bits per second to 9,600 bits per second.

#### Cost-reducing technology

Bell Laboratories works closely with the telephone companies and Long Lines to help hold down costs of operating the nationwide network and to improve network maintenance.

For example, a computerized system designed by Bell Laboratories and Long Lines engineers



eventually will help centralize maintenance for facilities that provide over 366 million miles of long distance circuits in the nation-wide network. This maintenance system automatically spots malfunctioning facilities, pinpoints specific problem areas and prints out reports for craft people to use in correcting problems. About 35 units of the new maintenance system will be installed by the end of this year in Long Lines offices across the country.

In response to the Bell System's ongoing program to improve service and increase capacity —while holding down costs—Bell Laboratories in 1973 worked to improve the performance of switching and transmission systems already in service.

Last year, for example, in effecting another in a series of improvements, Bell Laboratories engineers further increased the call-handling capacity of the TD-2 microwave radio system to seven times that of the original model introduced in 1950. TD-2 furnishes over half the long distance circuit-mileage in the United States and carries more than 95 per cent of all intercity television.

Bell Laboratories continued to increase the call-handling capacity—as well as the reliability—of our No. 1 Electronic Switching System (ESS) used for local service. In recent years, equipment changes in this system have increased its capacity significantly. A number of increases also came from refinements in the programmed instructions that control the machine's switching action. Since the first system was introduced in 1965, equipment and program changes have increased the capacity of our No. 1 ESS from 25,000 to 110,000 calls an hour. Program changes made in 1973 alone increased capacity more than 15 per cent.

To help the operating companies provide better rural service, Bell Laboratories engineers in 1971 designed an inexpensive circuit amplifier that strengthens telephone signals weakened by electrical resistance in the copper wires used to connect remote rural communities to central offices many miles away. In 1973, an improved version of this circuit amplifier

became available to provide still better rural service. The circuit also allows the telephone companies to use smaller copper wires; this not only promises savings of over \$10 million a year, but also will help the Bell System conserve the nation's copper supplies.

Along with the traditional factors of cost and function considered in designing new systems and equipment, Bell Laboratories also searches for ways to optimize the use of raw materials. Last year, Bell Laboratories scientists explored a chemical process for recycling one of the most common types of plastic used for insulating wire. The process has been applied only in laboratory experiments thus far, but it would appear to permit the recycling of the plastic material—of which we use approximately 200 million pounds a year—making it available for reuse in Bell System applications. The economic feasibility of the process will be evaluated by Western Electric.

The Financial Statements on the following pages consolidate the accounts of American Telephone and Telegraph Company and its telephone subsidiaries. These companies maintain their accounts in accordance with the Uniform System of Accounts prescribed by the Federal Communications Commission.

These financial statements have been prepared in conformity with generally accepted accounting principles, which are consistent in all material respects with the accounting prescribed by the Federal Communications Commission, except for investments, as discussed in Notes to Consolidated Financial Statements.

Coopers & Lybrand, Certified Public Accountants, have examined these financial statements and their report is shown below. The other auditors referred to in their report are Arthur Young & Company as auditors of Western Electric Company and Southwestern Bell Telephone Company, and Arthur Andersen & Co. as auditors of Illinois Bell Telephone Company.

R. N. Flint Vice President and Comptroller

#### Report of Independent Certified Public Accountants

To the Share Owners of

American Telephone and Telegraph Company: We have examined the consolidated balance sheet of American Telephone and Telegraph Company and its telephone subsidiaries as of December 31, 1973 and the related statements of income and reinvested earnings and changes in financial position for the year then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances. We previously examined and reported upon the consolidated financial statements of the Company and its telephone subsidiaries for the year 1972. The financial statements of two telephone subsidiaries included in the consolidated financial statements (constituting total assets of \$9,559,104,000 and \$8,752,572,000 and total operating revenues of \$3,705,397,000 and \$3,274,481,000 included in the consolidated totals for 1973 and 1972, respectively) were examined by other auditors. The consolidated financial statements of Western Electric Company, Incorporated and Subsidiaries, the Company's nonconsolidated subsidiary (the investment in and net income of which are

disclosed in the accompanying financial statements) were also examined by other auditors. The reports of other auditors have been furnished to us and our opinion expressed herein, insofar as it relates to the amounts included in the consolidated financial statements for subsidiaries examined by them, is based solely upon such reports.

In our opinion, based upon our examination and the reports of other auditors, the consolidated financial statements on pages 28 to 36 present fairly the consolidated financial position at December 31, 1973 and 1972, the consolidated results of operations and the consolidated changes in financial position for the years then ended of American Telephone and Telegraph Company and its telephone subsidiaries, in conformity with generally accepted accounting principles applied on a consistent basis.

Coopers & Lybrand

1251 Avenue of the Americas, New York, N.Y. February 12, 1974

	Thousa	nds of Dollars
ODED ATTINIC DEVENILIEC	Year 1973	Year 1972
OPERATING REVENUES		<b>610.060.004</b>
Local service	\$11,418,541	\$10,362,884
Toll service	11,278,453 982,712	9,771,433 908,718
Less: Provision for uncollectibles	152,386	138,923
Total operating revenues	23,527,320	20,904,112
OPERATING EXPENSES		į
Maintenance	4,830,530	4,293,806
Depreciation	3,332,403	3,041,726
Traffic—primarily costs of handling messages	1,823,646	1,668,831
Commercial—primarily costs of local business office operations	814,521	720,180
Marketing	998,276	895,050
Accounting	649,027	606,508
Provision for pensions and other employee benefits (B)	1,656,764 894,967	1,510,668 781,449
Other operating expenses		
Total operating expenses	15,000,134	13,518,218
Net operating revenues	8,527,186	7,385,894
OPERATING TAXES		
Federal income (A) (C):		
Current	931,617	837,416
Deferred	806,159	604,317
Investment tax credit—net	225,209	228,180
Current	112,255	108,781
Deferred	62,680	45,393
Other—primarily property, gross receipts and payroll-related taxes	2,212,426	1,982,649
Total operating taxes	4,350,346	3,806,736
Operating income (carried forward)	\$ 4,176,840	\$ 3,579,158

	Thousa Year 1973	nds of Dollars Year 1972
Operating income (brought forward)	\$ 4,176,840	\$ 3,579,158
OTHER INCOME  Western Electric Company net income Interest charged construction Miscellaneous income and deductions—net (D)	315,305 223,283 (35,083)	282,941 208,718 (43,742)
Total other income	503,505	447,917
Income before interest deductions and extraordinary item	4,680,345 1,733,658	4,027,075 1,495,017
Income before extraordinary item	2,946,687 46,569	2,532,058
NET INCOME	2,993,256	2,532,058
Preferred dividend requirements	185,963	145,730
INCOME APPLICABLE TO COMMON SHARES	\$ 2,807,293	\$ 2,386,328
EARNINGS PER COMMON SHARE (after preferred dividend requirements) based on average shares outstanding, 554,258,000 in 1973 and 549,501,000 in 1972 Before extraordinary item Extraordinary item (E)	\$4.98 	\$4.34
	\$5.06	\$4.34
REINVESTED EARNINGS At beginning of year	\$11,475,694 2,993,256	\$10,577,496 2,532,058
	14,468,950	13,109,554
Deduct—Dividends declared: Preferred	191,990 1,590,922 12,387	149,765 1,483,146 949
	1,795,299	1,633,860
REINVESTED EARNINGS AT END OF YEAR	\$12,673,651	\$11,475,694

	Thousand	ls of Dollars
	December 31, 1973	December 31, 1972
ASSETS		
TELEPHONE PLANT—at cost		
In service	\$70,710,094	\$63,920,261
Under construction	3,201,504 93,078	3,086,288 75,707
Ticla for future asc	74,004,676	67,082,256
Less: Accumulated depreciation	15,436,611	14,482,348
· · · · · · · · · · · · · · · · · · ·	58,568,065	52,599,908
INVESTMENTS		
At equity (F)	3,243,641	3,118,431
At cost (E)	63,255	108,832
	3,306,896	3,227,263
CURRENT ASSETS		
Cash and temporary cash investments—less drafts outstanding:		
1973, \$289,309,000; 1972, \$271,441,000 (G)	1,060,013	1,125,325
Receivables—less allowance for uncollectibles: 1973, \$30,163,000;	0.007.044	0.600.762
1972, \$28,334,000	2,987,844 369,117	2,698,763 337,987
Prepaid expenses	144,505	128,376
	4,561,479	4,290,451
DEFERRED CHARGES	614,674	507,423
TOTAL ASSETS	\$67.051.114	\$60,625,045
TOTAL AUGISTO	\$67,051,114	\$60,625,045

	Thousands of Dollars  December 31, 1973 December 31, 19	
LIABILITIES AND CAPITAL	2000111001 01, 1770	2000
EQUITY American Telephone and Telegraph Company		
Preferred shares (H)	\$ 2,983,623	\$ 2,003,816
Common shares (I)	14,750,953	14,671,775
Reinvested earnings—see page 29	12,673,651	11,475,694
Minority ownership interest in consolidated subsidiaries	30,408,227 815,068	28,151,285 736,650
	31,223,295	28,887,935
LONG AND INTERMEDIATE TERM DEBT (J)	26,642,326	24,143,326
INTERIM DEBT (due within one year but intended to be refinanced) (K)	1,728,289	1,876,319
OTHER CURRENT LIABILITIES (excluding interim debt) Accounts payable Taxes accrued Advance billing and customers' deposits Dividends payable	1,733,660 955,632 581,125 493,110 464,521	1,636,553 607,263 528,336 438,941 413,910
Interest accrued	4,228,048	3,625,003
DEFERRED CREDITS		
Deferred income taxes	2,054,086 1,099,643 75,427	1,186,702 874,434 31,326
	3,229,156	2,092,462
LEASE COMMITMENTS (L)		
TOTAL LIABILITIES AND CAPITAL	\$67,051,114	\$60,625,045

### Consolidated Statements of Changes in Financial Position

SOURCE OF FUNDS:		nds of Dollars
Operations	Year 1973	Year 1972
Income before extraordinary item	\$ 2,946,687	<b>\$ 2,532,058</b>
Depreciation	3,332,403	3,041,726
Deferred income taxes	867,384	653,379
Investment tax credit—net	225,209	229,998
Less—Income not providing funds: Interest charged construction	223,283	208,718
equity basis	114,804	136,782
Total funds from operations	7,033,596	6,111,661
Proceeds from sale of investment in Communications Satellite Corporation (see note (E))	104,484	
(See Hote (E))	104,404	
Financing		
Issuance of shares (principally preferred)	1,058,985	846,518
Issuance of long and intermediate term debt	2,809,000	2,950,000
Change in interim debt—net	(148,030)	276,309
Total funds from financing	3,719,955	4,072,827
Other changes in minority ownership interest in consolidated subsidiaries	78,418	76,998
Change in working capital	332,017	(250,479)
Other—net	8,970	25,318
	\$11,277,440	\$10,036,325
APPLICATION OF FUNDS:	=======================================	<del></del>
Telephone plant	\$9,077,277	\$ 8,081,514
Dividends	1,782,912	1,632,911
Change in deferred charges	107,251	102,924
Repayment of long and intermediate term debt	310,000	35,000
Acquisition of part of the minority ownership interest in New England Telephone and Telegraph Company	_	183,976
and relegiaph Company	#11 077 440	
	\$11,277,440	\$10,036,325
The change in working capital is accounted for by:	Year 1973	Year 1972
Increase in other current liabilities (excluding interim debt):		
Accounts payable	\$ 97,107	\$ 157,240
Taxes accrued	348,369	52,784
Advance billing and customers' deposits	52,789 54,160	63,969 41,799
Dividends payable	54,169 50,611	66,897
	603,045	382,689
Increase (decrease) in current assets:	000,043	362,069
Cash and temporary cash investments, net of drafts	(65,312)	175,107
Receivables	289,081	407,799
Material and supplies	31,130	24,446
Prepaid expenses	16,129	25,816
	271,028	633,168
Change in working capital	\$ 332,017	\$ (250,479)

(A) Accounting Policies—The financial statements reflect the application of certain accounting policies described in this note. Other policies and practices are covered in notes (B), (C) and (G).

Consolidation—The consolidated financial statements include the accounts of the American Telephone and Telegraph Company and its telephone subsidiaries. All significant intercompany transactions are excluded from these statements except as discussed below under "Purchases from Western Electric." The investment in Western Electric Company, Incorporated, an unconsolidated subsidiary, and certain other investments (where it is deemed that the Company's ownership gives it the ability to exercise significant influence over operating and financial policies) are carried at equity. All other investments are carried at cost.

Purchases from Western Electric—Most of the telephone equipment, apparatus and materials used by the companies consolidated has been manufactured or procured for them by Western Electric Company. Contracts with the telephone companies provide that Western's prices to them shall be as low as to its most favored customers for like materials and services under comparable conditions. The consolidated financial statements reflect items purchased from Western at cost to the companies, which cost includes the return realized by Western on its investment devoted to this business.

Depreciation — Provision for depreciation (5.1% in 1973 and 5.2% in 1972 of the cost of depreciable plant in service) is based on straight-line composite rates. Depreciation for income tax purposes is determined on different bases and methods as explained under "Income Taxes" below.

Income Taxes:

(1) Under various accelerated depreciation provisions of the tax law, depreciation for income tax purposes on plant placed in service after 1969 is greater than the straight-line depreciation provided in the accounts. In addition, the

Companies have adopted for income tax purposes shorter depreciation lives than those used for book purposes for certain plant, as allowed in recent income tax regulations of the Treasury Department. Provision is included in income tax expense for the deferred income taxes resulting from the use of accelerated depreciation and the shorter tax lives. Also see note (C).

(2) The Company's effective Federal income tax rate as determined from the statements of income (Federal income taxes divided by the sum of Federal income taxes and net income) was 39.1% in 1973 and 1972. The difference of 8.9% between the effective rate and the 48% Federal income tax statutory rate is attributable to the following factors:

	1973	1972
a. Earnings applicable to investments in companies accounted for on an equity basis, including Western Electric Company, which are reflected net of income taxb. Certain taxes and payroll related construction costs capitalized in the financial statements but deducted for income tax purposes, net of applicable	3.1%	3.3%
depreciation adjustments for current and prior years	2.9%	2.9%
c. Interest charged construction which is excluded from taxable income, net of applicable depreciation adjustments for current		2.,,,,
and prior years	1.7%	1.9%
d. Profits on telephone plant items purchased from Western Electric Company, which are capitalized on the books of the Companies but not for tax purposes, and which reduce depreciation expense for tax purposes e. Amortization of investment tax credits over the life of the plant which gave rise to the credits, which amortization reduced	(.7)%	(.8)%
income tax expense for the years ended December 31, 1973 and 1972 by about \$61,906,000 and \$52,232,000, respectively f. Other miscellaneous differences between the calculations of taxable income and book	1.2%	1.2%
income before taxes	.7%	.4%
TOTAL.	8 00%	Q Q0/

Research and Development—Basic research and fundamental development costs, which

are included in "Other operating expenses" on the statements of income, are expensed currently and amounted to \$170,129,000 in 1973 and \$149,362,000 in 1972. In addition, the cost of specific development and design work incurred by Western Electric Company is related to products manufactured and is included in the cost of such products (see "Purchases from Western Electric" above).

(B) Provision for Pensions and Death Benefits The Company and its consolidated subsidiaries have non-contributory plans covering all employees and providing for service pensions and certain death benefits. These companies have accrual programs under which actuarially determined regular payments are made to trust funds that are irrevocably devoted to service pension and death benefit purposes. The total provision for these service pensions and death benefits, including amounts charged to construction, was \$1,080,848,000 in 1973 and \$986,319,000 in 1972.

(C) Income Tax Treatment of Cost of Retiring Property-The Company and its telephone subsidiaries are adopting, for income tax purposes for the years after 1970, changes in their method of treating the cost of removal of certain property placed in service prior to 1971. The Internal Revenue Service, by letter dated January 7, 1974, has indicated its approval of such changes but such letter is subject to clarification and further interpretation. Also, the question has not yet been resolved as to whether provision for deferred income taxes on the books of the Company and its telephone subsidiaries, relating to the effects of the changes in such method, will be prescribed; if not prescribed, net income for the year in which such resolution is made will be increased by the cumulative amount (which could approximate up to \$190,000,000 as of December 31, 1973) of the resulting reduction in income taxes currently payable. It is presently estimated that, in addition, such reduction for 1974 could approximate \$80,000,000. (D) Miscellaneous Income and Deductions— Includes as a deduction in 1973 and 1972 the minority ownership interest in net income of certain consolidated subsidiaries in the amounts of \$67,955,000 and \$72,985,000, respectively.

(E) Extraordinary Item—The Company's investment of \$57,915,000, at cost, in 2,896,000 shares of Communications Satellite Corporation ("Comsat") common stock was sold through a public offering in June, 1973, resulting in a gain of \$46,569,000 after income taxes of \$19,958,000.

(F) Investments at Equity—At December 31, 1973, dollars expressed in thousands, comprise:

				Equit	У	
Company	Percent Ownership	Market Value <sup>2</sup>	Shares at Cost <sup>3</sup>	Excess of Net Assets Over Cost	Advances	Total
Western Electric Co., Inc. <sup>1</sup>	100.0	\$ <b>-</b>	\$1,326,001	\$1,689,352	\$ -	\$3,015,353
The Southern New England Tel. Co.	16.8	60,392	47,562	23,776	16,500	87,838
Bell Tel. Laboratories, Inc	50.04		84,500	_		84,500
Cincinnati Bell Inc	25.7	35,858	24,345	17,520	10,400	52,265
All Other	<u> </u>	_	871	2,809	5	3,685
			\$1,483,279	\$1,733,457	\$26,905	\$3,243,641

<sup>&</sup>lt;sup>1</sup>Total assets and liabilities of Western Electric Company, Incorporated and its subsidiaries at December 31, 1973 were \$4,828,143,000 and \$1,812,790,000, respectively.

#### (G) Cash and Temporary Cash Investments—

Cash and temporary cash investments have been reduced by the amount of drafts outstanding with a corresponding reduction in accounts payable. It is the practice of the Company and some telephone subsidiaries to make certain payments by draft and to record such drafts as accounts payable until such time as the banks honoring the drafts have presented them for payment. The Company maintains cash and temporary cash investments not only to meet its own obligations but to maintain funds upon which the subsidiary companies may draw on a day-to-day basis.

(H) Preferred Shares —At December 31, 1973, 50,000,000 preferred shares at \$1 par were authorized. Outstanding, at a \$1,000 stated value, were 625,000 shares of \$77.50 cumulative preferred; and at a \$50 stated value, 27,460,000 shares of \$4 cumulative convertible preferred, 10,000,000 shares of \$3.64 cumulative preferred and 9,604,000 shares of \$3.74 cumulative preferred. As a result of delayed delivery contracts, an additional 396,000 shares of \$3.74 cumulative preferred were issued on February 5, 1974. The proceeds in excess of stated value amounted to \$5,807,000 and \$5,808,000 at December 31, 1973 and 1972, respectively.

The \$77.50 preferred shares may be redeemed by the Company at a premium of \$73.10 per \$1,000 share before January 31, 1975 and at diminishing amounts thereafter. These shares are subject to redemption without premium through an annual sinking fund commencing

February 1, 1978.

Each \$4 preferred share may be redeemed by the Company at a premium of \$1 per \$50 share commencing August 1, 1974 and at diminishing amounts thereafter, and is convertible into approximately 1.05 common shares of the Company. During 1973, 7,827 shares were converted into 8,239 common shares.

The \$3.64 preferred shares may be redeemed by the Company at a premium of \$3.64 per \$50 share before April 30, 1974 and at diminishing amounts thereafter. These shares are subject to redemption without premium through an annual sinking fund commencing May 1, 1984.

The \$3.74 preferred shares may be redeemed by the Company at a premium of \$3.74 per \$50 share before January 31, 1975 and at diminishing amounts thereafter. These shares are subject to redemption without premium through an annual sinking fund commencing February 1, 1985.

(I) Common Shares—At December 31, 1973, 750,000,000 common shares at \$16% par value were authorized. Outstanding were 555,284,000 shares and 553,714,000 shares as of December 31, 1973 and 1972, respectively. Proceeds in excess of the par value of common shares amounted to \$5,496,221,000 and \$5,443,203,000 at the end of 1973 and 1972, respectively.

At the end of 1973 warrants were outstanding to purchase 31,321,060 shares at any time through May 15, 1975 at \$52 per share.

<sup>&</sup>lt;sup>2</sup>Where applicable, based on N.Y. Stock Exchange closing price for 1973.

<sup>&</sup>lt;sup>3</sup>The Uniform System of Accounts of the Federal Communications Commission requires that investments be carried on the books of the companies at cost. In accordance with generally accepted accounting principles, certain investments are included at equity in the accompanying balance sheets. See note (A) "Consolidation."

<sup>&</sup>lt;sup>4</sup>Western Electric Company, Incorporated, owns the other 50.0 percent of the Bell Telephone Laboratories, Incorporated.

Warrants were exercised to purchase 16,562 shares in 1973.

The Company issued 1,543,313 shares at market during 1973 under the Share Owner Dividend Reinvestment and Stock Purchase Plan.

(J) Long and Intermediate Term Debt—Interest rates and maturities on long and intermediate term debt outstanding at December 31, 1973, in millions of dollars, were as follows:

	25/8%	4% to	7% to	
Maturities	to 37/8%	67/8%	93/8%	Total
1974-1979	\$ 650	\$1,000	\$ 375	\$ 2,025
1980-1989	2,480	583	225	3,288
1990-1999	642	3,497	450	4,589
2000-2013		4,612	12,128	16,740
Total	\$3,772	\$9,692	\$13,178	\$26,642

The above table includes \$35 million 3% debentures due March 15, 1974 and \$25 million 3% debentures due April 15, 1974, which will be refinanced.

Since December 31, 1973, six subsidiaries have sold or announced their intention to sell \$1,000,000,000 of long or intermediate term debt. The proceeds of such sales will be applied toward repayment of debt, including interim debt, and for general corporate purposes, including extensions, additions and improvements to plant.

(K) Interim Debt—Interim debt outstanding at December 31, 1973 and 1972, in millions of dollars, is comprised of the following:

	1973	1972
Bank loans		\$1,534
Commercial paper	440	342
Total	\$1,728	\$1,876

At December 31, 1973 the average rate of interest on such debt was 9.6%. See also last paragraph of note (J) above.

(L) Lease Commitments—Total rental expense for the years ended December 31, 1973 and 1972 was about \$515,991,000 and \$448,602,000, respectively. At December 31, 1973 the aggregate minimum rental commitments under noncancelable leases for the periods shown are as follows:

Years	Aggregate Minimum Noncancelable Lease Amounts
1974	\$243,501,000
1975	220,648,000
1976	194,034,000
1977	170,418,000
1978	152,214,000
1979-1983	494,209,000
1984-1988	281,012,000
1989-1993	186,251,000
Thereafter	682,247,000

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<sup>2.</sup> Member of the Audit Committee

<sup>3.</sup> Member of the Pension Fund Advisory Committee

<sup>4.</sup> Member of the Compensation Committee

<sup>5.</sup> Member of the Proxy Committee



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